IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Currently Amended): The method of claim [[1]] 27, wherein said preparing comprises forming said hard mask comprising at least one of an organosilicon layer and an organo-metallic layer.

Claim 3 (Canceled).

Claim 4 (Currently Amended): The method of claim [[1]] 27, wherein said removing said light-sensitive material comprises exposing said light-sensitive material to an oxygen-containing plasma.

Claim 5 (Currently Amended): The method of claim [[1]] 27, wherein said treating said surface layer of said hard mask comprises exposing said hard mask layer to an oxygen-containing plasma.

Claim 6 (Original): The method claims 4, or 5, wherein said exposing said hard mask layer to said oxygen-containing plasma comprises exposing said hard mask layer to a plasma formed from the introduction of oxygen (O_2).

Claim 7 (Currently Amended): The method of claim [[1]] 27, wherein said removing said light-sensitive layer and said treating said surface layer of said hard mask are performed within the same process chamber.

Claim 8 (Currently Amended): The method of claim [[1]] 27, further comprising:

determining an endpoint for completion of said removing said layer of light-sensitive material.

Claim 9 (Currently Amended): The method of claim [[1]] 27, further comprising:

determining an endpoint for completion of said treating said surface layer of said hard mask.

Claims 10-20 (Canceled).

Claim 21 (Currently Amended): ~~The method of claim 4,~~ A method of preparing a structure on a substrate comprising:

preparing a film stack comprising a thin film, a hard mask formed on said thin film, and a layer of light-sensitive material formed on said hard mask, wherein said thin film comprising mono-crystalline silicon, poly-silicon, doped silicon, silicon nitride, silicon dioxide or a low dielectric constant material or a combination of two or more thereof, and wherein said hard mask comprising a tunable anti-reflective coating formed within said film stack having a structural formula R:C:H:X, wherein R is selected from the group consisting of Si, Ge, B, Sn, Fe, Ti, and combinations thereof, and wherein X is not present or is selected from the group consisting of one or more of O, N, S, and F;

forming a pattern in said layer of light-sensitive material;

transferring said pattern to said hard mask to form a patterned hard mask;

removing said layer of light-sensitive material;

treating a surface layer of said patterned hard mask after at least a portion of the light sensitive material is removed, in order to chemically alter said surface layer to a depth of at least 10 angstroms; and

transferring said pattern to said thin film using said patterned treated hard mask as an etch mask,

wherein said removing said light-sensitive material comprises exposing said light-sensitive material to an oxygen-containing plasma, and

wherein said exposing said light-sensitive material to said oxygen-containing plasma includes setting an exposure time and a substrate holder temperature for said exposure.

Claim 22 (Original): The method of claim 21, wherein said setting said exposure time includes setting said exposure time for approximately 10 seconds to approximately 200 seconds.

Claim 23 (Original): The method of claim 21, wherein said setting said substrate holder temperature includes setting said substrate holder temperature at approximately 20C to 400C.

Claim 24 (Currently Amended): ~~The method of claim 5,~~ A method of preparing a structure on a substrate comprising:

preparing a film stack comprising a thin film, a hard mask formed on said thin film, and a layer of light-sensitive material formed on said hard mask, wherein said thin film comprising mono-crystalline silicon, poly-silicon, doped silicon, silicon nitride, silicon dioxide or a low dielectric constant material or a combination of two or more thereof, and wherein said hard mask comprising a tunable anti-reflective coating formed within said film

stack having a structural formula R:C:H:X, wherein R is selected from the group consisting of Si, Ge, B, Sn, Fe, Ti, and combinations thereof, and wherein X is not present or is selected from the group consisting of one or more of O, N, S, and F;

forming a pattern in said layer of light-sensitive material;

transferring said pattern to said hard mask to form a patterned hard mask;

removing said layer of light-sensitive material;

treating a surface layer of said patterned hard mask after at least a portion of the light sensitive material is removed, in order to chemically alter said surface layer to a depth of at least 10 angstroms; and

transferring said pattern to said thin film using said patterned treated hard mask as an etch mask,

wherein said treating said surface layer of said hard mask comprises exposing said hard mask layer to an oxygen-containing plasma, and

wherein said exposing said hard mask layer to said oxygen-containing plasma includes setting an exposure time and a substrate holder temperature for said exposure.

Claim 25 (Original): The method of claim 24, wherein said setting said exposure time includes setting said exposure time for approximately 10 seconds to approximately 1200 seconds.

Claim 26 (Original): The method of claim 24, wherein said setting said substrate holder temperature includes setting said substrate holder temperature at approximately 20C to 400C.

Claim 27 (Currently Amended): ~~The method of claim 1,~~ A method of preparing a structure on a substrate comprising:

preparing a film stack comprising a thin film, a hard mask formed on said thin film, and a layer of light-sensitive material formed on said hard mask, wherein said thin film comprising mono-crystalline silicon, poly-silicon, doped silicon, silicon nitride, silicon dioxide or a low dielectric constant material or a combination of two or more thereof, and wherein said hard mask comprising a tunable anti-reflective coating formed within said film stack having a structural formula R:C:H:X, wherein R is selected from the group consisting of Si, Ge, B, Sn, Fe, Ti, and combinations thereof, and wherein X is not present or is selected from the group consisting of one or more of O, N, S, and F;

forming a pattern in said layer of light-sensitive material;

transferring said pattern to said hard mask to form a patterned hard mask;

removing said layer of light-sensitive material;

treating a surface layer of said patterned hard mask after at least a portion of the light sensitive material is removed, in order to chemically alter said surface layer to a depth of at least 10 angstroms; and

transferring said pattern to said thin film using said patterned treated hard mask as an etch mask,

wherein said removing said light-sensitive material is followed by said treating said surface layer of said hard mask, said exposing and said treating comprise exposing said substrate to an oxygen-containing plasma for an exposure time at a substrate holder temperature.

Claim 28 (Original): The method of claim 27, wherein said exposing said substrate to said oxygen-containing plasma for said exposure time at said substrate holder temperature

includes exposing said substrate for said exposure time ranging from approximately 20 seconds to 1400 seconds, at said substrate holder temperature ranging from approximately 20C to 400C.

Claim 29 (Previously Presented): The method of claim 21, wherein said setting said exposure time comprising setting the exposure time to a time that includes an over treatment exposure time of the hard mask after removal of the light sensitive material.

Claim 30 (Previously Presented): The method of claim 29, wherein said over treatment exposure time is 200% of an exposure time for removing the light sensitive layer.

Claim 31 (Previously Presented): The method of claim 29, wherein said over treatment exposure time is 10 to 1200 seconds.

Claim 32 (Previously Presented): The method of claim 31, further comprising setting a substrate temperature to between 20°C and 400°C.